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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/064,869 | 08/26/2002 | Jeffrey S. Brown | BUR920010223 | 6165 |

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| EXAMINER | |
|---|---|
| WEISS, HOWARD | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2814 | |

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/064,869 | BROWN ET AL. | |
| | Examin r | Art Unit | |
| | Howard Weiss | 2814 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Attorney's Docket Number: BUR920010223

Filing Date: 8/26/02

Continuing Data: none

Claimed Foreign Priority Date: none

Applicant(s): Brown et al. (Fried, Nowak, Rainey)

Examiner: Howard Weiss

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts (U.S. Patent No. 6,064,588) and Iizuka et al. (U.S. Patent No. 4,641,165).

Crafts shows most aspects of the instant invention (e.g. Figures 3 to 8) including:

- first **50c** and second **60t** transfer devices each having body regions including channel regions **74** and first **72** and second **76** diffused electrodes and gate electrodes **70**

- a differential storage capacitor **62c,62t** with at lease one node in electrical contact with the first and second electrode of the transfer devices

Crafts does not explicitly show the primary capacitance of the storage capacitor being at least approximately 5 times the inherent capacitances of said capacitor. Iizuka et al. teach (e.g. Figures 5 and 6) to make the primary capacitance $C_2$ of the storage capacitor to be at least approximately 5 times the inherent capacitances $C_1$ (Column 5 lines 5 to 59) to prevent soft-errors (Column 3 Lines 40 to 42). It would have been obvious to a person of ordinary skill in the art at the time of invention to make the primary capacitance of the storage capacitor to be at least approximately 5 times the inherent capacitances as taught by Iizuka et al. in the device of Crafts to prevent soft-errors.

In reference to the claim language pertaining to capacitive values substantially reducing differential charge loss, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. (In re Best, 195 USPQ 430, 433 (CCPA 1977) and In re Swinehart, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112). Since the combination of Crafts and Iizuka et al. show all the features of the claimed invention, the substantially reduced differential charge loss is an inherent property of Crafts and Iizuka et al.'s invention.

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts and Iizuka et al., as applied to Claim 1 above, and further in view of Tashiro (U.S. Patent No. 5,241,211).

Crafts and Iizuka et al. show most aspects of the instant invention (Paragraph 2) except for the SOI substrate. Tashiro teaches (e.g. Column 1 Lines 14 to 23) to use SOI substrates to reduce parasitic capacitances. It would have been obvious to a person of ordinary skill in the art at the time of invention to use an SOI substrate as

taught by Tashiro in the device of Crafts and Iizuka et al. to reduce parasitic capacitances.

4. Claims 6 to 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts and Iizuka et al., as applied to Claim 1 above, and further in view of Choi et al. (DRC 2000).

Crafts and Iizuka et al. show most aspects of the instant invention (Paragraph 2) except for the features of the transfer devices and the storage capacitor disposed on rails of semiconductor material. Choi et al. teach (e.g. Figure 1) to form semiconductor devices using semiconductor rails to reduce parasitic capacitance and resistance (see Conclusion section on Page 23). It would have been obvious to a person of ordinary skill in the art at the time of invention to form semiconductor devices using semiconductor rails as taught by Choi et al. in the device of Crafts and Iizuka et al. to reduce parasitic capacitance and resistance.

***Response to Arguments***

5. Applicant's arguments filed 11/7/03 have been fully considered but they are not persuasive. The Applicants' state that Iizuka et al. do not teach a differential capacitor and do not see how to incorporate the device in a differential manner. However, the transistor/capacitor taught by Iizuka et al. (e.g. source drain and plate **26,24,32** in Figure 6) is directly analogous to the transistor/capacitor shown in Crafts (e.g. source drain and plate **72,76,63** in Figure 6) and, therefore, easily adapted.

In reference to the device of Crafts "teaching away" form the instant invention, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. *In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).* "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130,*

*1132 (Fed. Cir. 1994).* As detailed in the rejection herein, the combination of Crafts and Iizuka et al. show all the limitations of the instant invention *as claimed* making said invention obvious.

In reference to the rejection not addressing the problem confronted by the claimed invention, the mere fact that the references relied upon by the Examiner to evince an appreciation of the problem identified and solved by the instant invention is not, standing alone, conclusive evidence of the non-obviousness of the claimed subject matter. The references may suggest doing what an applicant has done even though those of ordinary skill in the art were ignorant of the existence of the problem. *In re Gershon, 152 USPQ 602 (CCPA 1967).*

In view of these reasons and those set forth in the present office action, the rejections of the stated claims stand.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

   A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814

Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318,** and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

9. The following list is the Examiner's field of search for the present Office Action:

| Field of Search | Date |
|---|---|
| U.S. Class / Subclass(es): 257/297 | thru 1/13/04 |
| Other Documentation: none | |
| Electronic Database(s): EAST, IEL | thru 1/13/04 |

HW/hw
14 January 2004

Howard Weiss
Examiner
Art Unit 2814

LONG PHAM
PRIMARY EXAMINER